

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF VIRGINIA  
Richmond Division**

<b>ePLUS, INC.,</b>	)	
	)	
<b>Plaintiff,</b>	)	<b>Civil Action No. 3:09cv620</b>
	)	
<b>v.</b>	)	
	)	
<b>LAWSON SOFTWARE, INC.</b>	)	
	)	
<b>Defendant.</b>	)	

**DECLARATION OF EXPERT MICHAEL I. SHAMOS, PH.D, J.D.  
IN SUPPORT OF DEFENDANT LAWSON'S  
PROPOSED CLAIM CONSTRUCTIONS**

## **BACKGROUND & QUALIFICATIONS**

1. My name is Michael I. Shamos. I hold the title of Distinguished Career Professor in the School of Computer Science at Carnegie Mellon University in Pittsburgh, Pennsylvania. I was a founder and Co-Director of the Institute for eCommerce at Carnegie Mellon and I now direct a graduate degree program in eBusiness Technologies. I have been involved in the computer field for over 45 years. I am competent to testify to the matters declared herein if I am called upon to do so. My résumé is attached as Exhibit 2 to this declaration.

2. I teach graduate courses at Carnegie Mellon in Electronic Commerce, including eCommerce Technology, Ubiquitous Computing, Electronic Payment Systems, Electronic Voting and Law of Computer Technology.

3. From 1979-1987 I was the founder and president of two computer software development companies in Pittsburgh, Pennsylvania: Unilogic, Ltd. and Lexeme Corporation.

4. I am an attorney admitted to practice in Pennsylvania and have been admitted to the Bar of the U.S. Patent and Trademark Office since 1981. I have not been asked to offer any opinions on patent law in this action.

5. I have previously testified in a number of cases concerning computer technology. My résumé in Exhibit 2 contains a list of cases in which I have testified in the last ten years.

6. I have been retained as a technical expert by the law firm of Merchant & Gould P.C. on behalf of Lawson Software, Inc. ("Lawson") in this action.

7. I have been engaged through Expert Engagements LLC ("EE"), a firm that locates expert services for law firms. EE charges \$550 per hour for my regular services, of which I receive \$495. EE charges \$750 per hour for time during which I am under oath, of which I receive \$675. I am one of the owners of EE. No part of my compensation is dependent on the outcome of this case.

8. I have been asked by counsel for Lawson to offer an expert opinion on the meaning to one of skill in the art of certain claim terms in U.S. Patents 6,505,172 (the '172 Patent), 6,055,516 (the '516 Patent), and 6,023,673 (the '673 Patent), which have been asserted against

Lawson (collectively, the “Patents”). In connection with my analysis, I have reviewed the Patents, their prosecution histories and the documents listed in Exhibit 1, attached hereto, including the claim construction orders of this Court in the cases *ePlus, Inc. v. Ariba, Inc.* and *ePlus, Inc. v. SAP America, Inc. and SAP AG*.

9. I have also been asked to respond to the opinions expressed in the “Declaration of Alfred C. Weaver, Ph.D. in Support of ePlus’s Proposed Claim Constructions for Certain Claim Terms in U.S. Patent Nos. 6,023,683 and 6,505,172” (the “Weaver Declaration”).

10. The individuals named as inventors in the Patents are referred to collectively herein as the “Applicants.” All the Patents name the same set of inventors.

#### **LEVEL OF SKILL IN THE ART**

11. The Asserted Claims of the Patents are drawn to electronic sourcing systems that permit searching of parts catalogs and preparing requisitions and purchase orders. In order to make and use the claimed inventions without undue experimentation, one of skill in the art in 1994 would need an undergraduate degree in computer science, or equivalent work experience, and, in addition, two years’ experience designing or programming electronic ordering systems.

#### **RESPONSE TO THE WEAVER DECLARATION**

12. Following is a detailed response to the Weaver Declaration. If I do not specifically address a particular point in the Weaver Declaration, that does not mean that I necessarily agree with it.

13. I do not agree with the characterization of a person of ordinary skill in the art as expressed in paragraph 7 of the Weaver Declaration. In particular, I do not agree that a bachelor of science degree in computer science would be required. Numerous experienced and talented programmers having no college degree populated the work force in 1994, and many still do. Furthermore, many such programmers began their careers even before universities began granting degrees in computer sciences. I do believe that experience equivalent to an undergraduate computer science would be necessary.

14. I do not agree that an understanding of the principles of supply chain management would be needed for one to make and use the alleged inventions. Indeed, the phrase “supply chain” appears nowhere in the specification that is common to the Patents, and no supply chain principles are even alluded to in the specification. I believe that familiarity with electronic ordering (procurement) systems would be necessary.

15. I therefore would characterize the person of ordinary skill as having an undergraduate degree in computer science, or equivalent work experience, and, in addition, two years’ experience designing or programming electronic ordering systems. Under either party’s definition, I believe myself to be a person of ordinary skill in the art.

16. I do not agree with paragraph 8 of the Weaver Declaration that either the level of skill described above or the level of skill proposed by Dr. Weaver would have been sufficient for a person to make and use the claimed inventions without undue experimentation.

17. Claim 1 of the ’516 Patent recites “a catalog selection protocol, said catalog selection protocol relying on said first set of predetermined criteria to select less than said entire collection of catalogs, and including matching a vendor identification code with a subset of said collection of catalogs, wherein said subset of catalogs includes both a vendor catalog from a predetermined vendor and a second catalog from a predetermined third party that is one of a manufacturer and a competing vendor, said predetermined third party selling items corresponding to items in said vendor catalog.” There is no disclosure in the specification of any “catalog selection protocol,” nor even any hint as to what the term “catalog selection protocol” might mean. In fact, the term appears only in the claims and no synonymous term or concept is mentioned in the specification. Therefore, one of skill in the art would not have been able to make and use the alleged invention of ’516 claim 1.

18. Because claims 2 and 6 of the ’516 Patent depend from claim 1, one of skill in the art would not have been able to make and use the alleged invention claimed therein.

19. Claim 9 of the ’516 Patent recites “a second identification code associated with a second item in a second catalog, said first item and said second item being generally equivalent.”

In the prior *SAP* case, the Court construed “generally equivalent” to mean “substantially similar.” However, the specification teaches no methodology for determining whether items are “generally equivalent” or “substantially similar.” Therefore, one of skill in the art would not have been able to produce the necessary “second identification code” and thus would not have been able to make and use the invention of ’516 claim 9.

20. Claim 21 of the ’516 Patent recites “a requisition module including data fields, user-generated criteria entered into at least one of said data fields to generate at least partial criteria corresponding to a desired item.” There is no teaching in the specification of how to generate “at least partial criteria corresponding to a desired item” from the recited “user-generated criteria.” Therefore one of skill in the art would not have been able to make and use the alleged invention of ’516 claim 21.

21. Claim 21 of the ’516 Patent further recites “a catalog selection criteria used to select less than said entire collection.” There is no teaching in the specification of any “catalog selection criteria” that might be used to restrict the set of catalogs, and it would not be clear to one of skill in the art what such criteria might be. Therefore, for at least this additional reason, one of skill in the art would not have been able to make and use the alleged invention of ’516 claim 21.

22. Claim 21 of the ’516 Patent further recites “a determination system that located items are generally equivalent.” No algorithm or process for determining whether items are “generally equivalent” or “substantially similar” is disclosed in the specification and it is not known to this day how to make such a determination automatically. Therefore, for at least this further reason, one of skill in the art would not have been able to make and use the alleged invention of ’516 claim 21.

23. Claim 22 of the ’516 Patent depends from claim 21 and is likewise not enabled.

24. Claim 29 of the ’516 Patent recites “a catalog selection protocol” similar to that of ’516 claim 1 and is not enabled for the same reason.

25. Therefore, I do not agree that one of skill in the art under either party's definition would have been able to build and implement the claimed inventions as alleged in paragraph 8 of the Weaver Declaration.

26. The principle of law relied upon by Dr. Weaver in paragraph 9 of the Weaver Declaration is incorrect. In discussing mean-plus-function elements implemented via computer software, he states that "I understand that the corresponding structures for such means-plus-function elements are to be construed as the algorithms for performing the recited functions." It is my understanding that this is not the law, and furthermore it is inconsistent with one of the principles in Appendix B to the Weaver Declaration on which Dr. Weaver claims to have relied. In Appendix B he states that "I understand from the teaching of the Federal Circuit, that in a means-plus-function claim in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the structure corresponding to the claimed means for performing the function recited in the claims is to be construed as to the special purpose computer programmed to perform the disclosed algorithm." That latter statement is closer to being correct – namely that the recited hardware as well as the algorithm comprise the necessary structure.

27. Paragraph 10 of the Weaver Declaration refers to an Exhibit 2 comparing the proposed construction of ePlus with those of Lawson. A more instructive comparison would be to match up the Lawson constructions of the mean-plus-function elements with those of this Court in the *SAP* case. All of the means-plus-function elements at issue in this case were construed in the earlier case, and, with some exceptions that I will delve into below, the Lawson constructions are nearly identical to those of the Court. Those of ePlus differ wildly from those of the Court.

#### Response to Weaver Section V.A., Paragraphs 11-13

28. While I have no substantive quarrel with the discussion of what an algorithm is in paragraphs 11-12 of the Weaver Declaration, the discussion is irrelevant. Dr. Weaver proceeds based on the legally incorrect assumption that the structure of a computer mean-plus-function

claim is limited to an algorithm, then uses the definition of “algorithm” circularly to exclude computer hardware. He does this in an evident attempt to avoid claim limitations (such as “runs on a local computer”) that would result in non-infringement. It is improper. Not only is it my understanding that this is legally incorrect, but it ignores the fact that algorithms are often implemented in both hardware and software, such as the Basic Input-Output System (BIOS) of a personal computer, which is stored in a hardware chip on the machine and invoked every time input or output is required.

Response to Weaver Section V.B., Paragraphs 14-36

29. Section V.B of the Weaver Declaration, paragraphs 14-36, is devoted to a discussion of the “running on a local computer” and “DDE protocol” limitations that appear in Lawson’s proposed mean-plus-function constructions. They also appear in this Court’s constructions in the *SAP* case. Dr. Weaver claims to have reviewed those constructions but never mentions them in his declaration, possibly because the constructions he is defending are completely contradictory.

30. Paragraph 14 of the Weaver Declaration refers to alleged “networked embodiments” disclosed in the specification. He uses them to argue that the “running on a local computer” limitation does not apply to such embodiments. He is wrong for the simple reason that, in my understanding, a patentee who relies on a mean-plus-function claiming is limited to those structures disclosed in the specification and their equivalents. The means-plus-function claims do not extend to embodiments that are alluded to but for which no algorithms are disclosed.

31. Also in paragraph 14, Dr. Weaver argues yet again, improperly, that no hardware limitations should be imported into a computer means-plus-function element.

32. Paragraph 15 of the Weaver Declaration effectively states Lawson’s contention that the DDE protocols are the only protocols linked in the Patents to the data transfers between the requisition/purchasing system and the shell program or search program. Lawson is correct, as explained below.

33. Paragraph 16 points to supposed networked embodiments disclosed in Fig. 1B and columns 16-19 of the ’683 specification. Because Dr. Weaver places so much reliance on these

disclosures, they merit detailed attention. There is no question that all the disclosed embodiments comprise a Host Computer (10 in Fig. 1A and 210 in Fig. 1B) and a Local Computer (20 in Fig. 1A and 220 in Fig. 1B). Furthermore, in all embodiments the Host Computer and Local Computer are in direct communication. The difference between Figs. 1A and 1B with regard to that communication is that a single double arrow connects boxes 10 and 20, while a wide double arrow connects boxes 210 and 220. The connection between 10 and 20 is described at '683 Patent, 5:9-18: "Host computer 10 and local computer 20 are preferably linked point-to-point or in a network employing the formats and protocols of IBM's System Network Architecture ('SNA'). Host computer 10 can be substantially any mainframe or minicomputer capable of running the desired programs and conducting the required communications. Preferably, host computer 10 is a mainframe computer, such as an IBM Model 3090, running the MVS operating system, the MVS-CICS application and a Virtual Telecommunication Access Method communications network." In this embodiment, the host and local computers are connected directly via a point-to-point link. The connection can be a literal electrical cable or (using the disclosed Virtual Telecommunications Access Method – VTAM) can be a dialup modem or even a token ring local area network. Under typical arrangements using a direct wire, the local computer and host computer would have been in the same room or building. Using VTAM the local computer and host computer could have been separated by arbitrary distances

34. For the Fig. 1B embodiment, the connection between 210 and 220 is described at '683 Patent, 17:26-29: "For this purpose, each local computer [220] is connected to host computer 210 via a phone/dataline and either a gateway or a minicomputer acting as a local host." Thus Fig. 1B describes a remote configuration in which the local computer and host computer are not necessarily in proximity to one another and may use a telephone line or other communications channel to exchange data. Typically the connection between 210 and 220 would not be a direct wire but would employ intermediary devices such as the telephone system.



Despite their differences, the purpose of the connection between the host and local computers in both Figs. 1A and 1B is the same – to allow the computers to communicate with one another.

35. In paragraph 16, Dr. Weaver claims that in the Fig. 1B embodiments, “the programs need not ‘run on the local computer’ or utilize a ‘DDE protocol of interface’.” There is no basis at all in the specification for that statement. The “programs” referred to (the ones that use the DDE protocol) are the requisition/purchasing system and the shell program or search program. In both Figs. 1A and 1B these programs run on the local computer. As described in the specification, “in the embodiment of FIG. 1A, Fisher RIMS 40 and TV/2 search program 50 are run by local computer 20.” ’683 Patent, 4:7-9. The situation in Fig. 1B is similar: “Local computer 220 is provided with programs including requisition/purchasing program 240, Shell program 252 and a graphic user interface 254 (preferably EASEL Workbench program 254 for OS/2) for listing items.” ’683 Patent, 17:12-15. Thus in both Fig. 1A and 1B the relevant programs are running on the local computer, regardless how the local computer and host computer are interconnected.

36. There is no question that programs run on the local computer and different program run on the host computer. There is also no question that these computers exchange data. However, the programs disclosed in the specification to use the DDE protocol always run on the same computer, not two or more different computers. Therefore, the protocols mentioned by Dr. Weaver for communicating between different computers have no relevance to requisition/purchasing system and the shell program or search program. These programs must communicate with each other while running on the same computer, and absolutely the only protocol disclosed in the specification for doing so is the DDE protocol.

37. Fig. 1B shows a file server 200 for storing programs and data. The search program 250 is described as being stored on server 200: “search program 250, which preferably comprises TV/2 search program 250, and catalog databases 236 are stored on file server 200.” ’683 Patent, 17:3-6. With respect to local computer 220, the programs “may be copied from server 220 when needed.” ’683 Patent, 17:16-17. This is an evident typographical error in the specification,

which should read “may be copied from server 200 when needed.” The reason is that Fig. 1B labels box 200 as “server” and 220 as “local computer.” One of ordinary skill would understand that the word “server” is correct, and the reference number should be the one for the server, which is 200, not 220. Regardless, the requisition/purchasing system and the shell program or search program all run on local computer 220 even if some or all of them are copied to the local computer from server 200.

38. In this context, it can be seen that Dr. Weaver’s discussion of networking protocols such as SNA, CICS, VTAM, LU 6.2, Ethernet, X.25, token ring, DDM, DIA, APPN, TCP/IP, and EDI are completely irrelevant because they do not handle communications between these programs, all of which run on a single machine. What is relevant is how data is exchanged between the requisition/purchasing system and the shell program or search program on the same machine, not different machines.

39. In paragraph 16, Dr. Weaver states, “a person of ordinary skill in the art would appreciate, based upon a review of the patent specification, that the inventors merely employed the DDE protocol because they were utilizing the IBM OS/2 operating system with the CICS OS/2 application in one of their preferred embodiments and such DDE protocol was available with such operating system and application.... However, such operating system and application are not required to implement the invention. ’683 Patent, Col. 3:60-67 (‘Local computer 20 is *preferably* a conventional microcomputer ... capable of ... running the OS/2 operating system 32 and also running the CICS OS/2 application 34) (emphasis added); 5:22-24 (‘Interface 60 *preferably* based upon the dynamic data exchange (‘DDE’) protocol provided by OS/2 operating system 32.’) (emphasis added).”

40. Even assuming that DDE is not required to implement the invention, that is not the relevant inquiry. It is my understanding that the question in means-plus-function construction under 35 U.S.C. 112 ¶ 6 is what structure is *disclosed*, not what structure is required or even adequate. The fact that other skilled artisans might be aware of, or might dream up, other methods for interprocess communication does not mean that such methods disclosed in the

specification. If they are not disclosed in fact, they are not properly included as structure corresponding to the recited function.

41. Dr. Weaver in paragraph 16 emphasizes the use of the word “preferably” in the specification when the DDE protocol is mentioned. I agree that for claims other than means-plus-function claims it is ordinarily improper to import a limitation introduced by the word “preferably” into a claim. The situation is markedly different for means-plus-function claims, however, in which the patentee is limited to *disclosed* structures, regardless of what wording might be used to introduce them. Here the word “preferably” is of no significance because DDE is the *only* protocol disclosed whereby the requisition/purchasing system and the shell program or search program running on the same machine can communicate.

42. In paragraph 16, Dr. Weaver further states that “[i]f a person of ordinary skill in the art was implementing the systems of the claimed inventions in a different operating system environment, different communications protocols could be employed as applicable to the operating system selected.” Even if true, that observation is not relevant to construction of a mean-plus-function element. The fact that other artisans might know of other ways of implementing the invention beyond those disclosed in the specification cannot expand the scope of a means-plus-function element. Whether those methods might be equivalents of the ones that are disclosed is a separate question from the question of what is the corresponding structure to the means-plus-function element, a question that Dr. Weaver does not appear to address and thus I will not address it here either.

43. All of the material in paragraphs 17-36 is inapplicable to construing the disputed means-plus-function elements. Dr. Weaver states in paragraph 17 that “the patent specification specifically discloses different communications protocols which can be employed to transfer data.” That is true, but the “different” protocols that are disclosed do not communicate data between programs running on the same computer. The DDE protocol is the only protocol mentioned or alluded to in the specification to perform that function. Protocols used to transfer data between different machines, as discussed in paragraphs 18-36, have no bearing on the DDE

limitation or the recited function. Dr. Weaver thus ignored the requirement under 35 U.S.C. § 112 ¶ 6 that corresponding structure must not only be disclosed in the specification, but also clearly linked to or associated with the function recited in the means-plus-function clause at issue.

44. For example, paragraph 21 states, “the patents-in-suit and the ’989 Patent further describe that an additional communications protocol, namely, electronic data interchange (EDI), can also be used for transmission of purchase orders and other data between local computer 40 [sic, 20] and the host computer 10 using an ERI/EDI interface.” This is true but irrelevant to the issue at hand. The means that incorporate the DDE protocol include at least the “means for building a requisition using data relating to selected matching items and their associated source(s),” “means for building a requisition that uses data obtained from said database relating to selected matching items on said order list,” “means for searching for matching items in the database,” and “means for selecting the product catalogs to search” (hereinafter collectively the “DDE means”). The DDE means do not transmit purchase orders between the local computer and a host computer, but are limited to transfer of data on a single machine. The DDE and EDI protocols perform different functions. EDI is a mechanism for sending data from one computer to another. DDE is a protocol allowing two programs running on the same machine to exchange data.

45. As another example, paragraph 31 states that “[b]ecause the patent specification describes the use of IBM’s SNA to communicate between two networked computers with reference to queries transmitted to check the availability of an item with respect to the remote host computer 10’s inventory database person of ordinary skill in the art would recognize that this same communication means can be utilized in the embodiment relating to a remotely-located Distributor’s host computer being simultaneously accessed by a large number of CSR’s local computers in a networked environment.” This observation has nothing to do with the claimed function corresponding to the DDE means and is irrelevant. Queries to the inventory database necessarily involve transferring data between machines. The DDE means do not do that.

Furthermore, it is my understanding that the fact that some networking algorithm is disclosed somewhere in the specification with respect to a different means does not make it a disclosed structure clearly linked to or associated with an entirely different means. Dr. Weaver does not even attempt to link or associate the SNA or other protocols with the functions recited in the means-plus-function clauses at issue, and there is nothing in his declaration which contradicts my opinion that the non-DDE protocols are not linked to or associated with the claimed functions.

46. Dr. Weaver concludes in paragraph 35 that “Lawson is incorrect and that a person of ordinary skill in the art in 1994 would have appreciated from a review of the patent specification that the requisition/purchasing program and the catalog search program could be executing on different computers in a networked environment and that such programs did not both need to be operating on the end-user’s local computer.” Even if true, the observation is not relevant to the construction of a mean-plus-function element, as it is my understanding that the inquiry is what structure is disclosed, not what one of skill in the art would have appreciated based on knowledge not disclosed in the Patent.

47. I therefore disagree with the opinion expressed by Dr. Weaver in paragraph 36 to the effect that “it would be improper to import limitations requiring that the software programs of the claimed inventions execute on a local computer and communicate via a DDE protocol.” I do not believe that has occurred. No limitations were “imported.” Instead, both Lawson and the Court in the *SAP* case were able to determine what structure is disclosed in the specification corresponding to the function of the means elements.

#### Response to Weaver Section V.C., Paragraphs 37-41

48. Section V.C, paragraphs 37-41, is devoted to the unsupported claim that the specification discloses structure corresponding to the two “generate purchase order” means. Paragraph 37 asserts that the algorithm associated with the claimed functions is:

- “(1) accepting the requisition; and
- (2) generating one or more purchase orders based on the data included in the requisition relating to the matching items selected from the items returned from searching selected product catalogs and based on predetermined rules relating to the user’s preference (*e.g.*,

one purchase order to each distinct supplier referenced in the requisition); and structural equivalents thereof.”

49. That is not an algorithm. It is merely a recitation of the claimed function, which is “generating one or more purchase orders.” No algorithm is given for extracting the relevant data from the items returned from searching the product catalogs. No method or algorithm is disclosed for representing or processing any “predetermined rules.” In fact, the only example of such a rule in the entire specification is the one cited, namely “one purchase order to each distinct supplier referenced in the requisition.”

50. Even the “one purchase order to each distinct supplier referenced in the requisition” rule recited in Dr. Weaver’s construction, moreover, is only stated as an example. Thus, under Dr. Weaver’s construction, this rule is not an actual limitation on the construction of the means-plus-function clause at issue. As I understand his proposed construction, he would contend that a system that did *not* invoke the rule to “generate one purchase order to each distinct supplier referenced in the requisition” would still satisfy his limitation if the system generated one or more purchase orders that invoked some *other* rule relating to a user’s preference, even if that rule is nowhere disclosed in the Patents. Thus, this portion of Dr. Weaver’s construction is an illusory step. Really, all Dr. Weaver’s second step requires is that the purchase orders be generated by *some* rule or rules relating to a user’s preference, whether disclosed in the Patents or not. This definition lacks any support in the specifications of the Patents and in any event is not an algorithm because it does not specify *how* the purchase order is generated.

51. The explanations proffered in paragraphs 38-41 are no better. In fact, the specification itself simply states that “a purchase order would be generated for an item” (’683 Patent, 10:62-63) without giving any algorithm for such generation. I do not contend that one of skill in the art would not be able to figure out how to generate a purchase order. In fact, one of skill in the art would be able to employ many methods for generating purchase orders, and therein lies the problem. A patentee who employs means-plus-function claiming is limited to disclosed structures, not any and all such structures as those of skill in the art might be able to imagine. Such unbridled interpretation would improperly construe the claimed invention not in

terms of structure, but in terms of function, effectively including in its scope any device, however assembled, that performs the recited function. 35 U.S.C. § 112 ¶ 6, as I understand it, mandates that means-plus-function claims not be so broadly construed.

52. Once again in paragraph 41 Dr. Weaver makes reference to what a person of ordinary skill in the art would understand to provide the necessary structure lacking within the four corners of the specification. That is not the appropriate question in construing means-plus-function elements, which I understand require disclosure of express structure.

Response to Weaver Section V.D., Paragraphs 42-46

53. Section V.D, paragraphs 42-46, is devoted to the unsupported assertion that the specification discloses structure corresponding to the “means for converting data” element. Dr. Weaver makes repeated reference to cross-reference tables, which are indeed disclosed in the specification. There is absolutely no discussion in the specification whatsoever, let alone any structure, associated with the function of “converting data relating to a selected matching item and an associated source to data relating to an item and a different source.” There is one and only one use of the term “converting” (or any term of like import) in the specification: “Once a requisition has been inventory sourced and accepted by the CSR, it can be converted to one or more purchase orders, as represented by step 114 in FIG. 3.” Converting a requisition into purchase orders is not “converting data relating to a selected matching item.”

54. Contrary to Dr. Weaver’s claim in paragraph 46, the use of cross-reference tables makes converting unnecessary. For example, if the purchaser performs a search and is provided with a hit list of items matching search criteria, then any of the items on the hit list can be ordered without the need for any converting. In fact, the “means for converting” element in ’683 claims 3 and 6 is an element without a clear purpose, since it is never explained why any conversion takes place or is necessary, or how or even whether the converted data is used. Even ’683 claims 28, 36 and 41, which are not asserted but include the step of “converting data relating to a selected matching item and an associated source to data relating to an item and a

different source,” fail to provide any elucidation since they likewise fail to specify what is done with any converted data.

55. I am mindful that looking up an item in a cross-reference table and locating a similar item in that table could be useful in searching for and returning equivalent items if the cross-reference tables were constructed appropriately. However, the function of searching is not tied in any way in the specification to “converting” and there is no structure whatsoever disclosed in the specification that is linked to “converting.” Locating a replacement or an equivalent part is not “converting” anything.

56. It is noteworthy that in the discussion of paragraphs 43-45, Dr. Weaver does not use the word “converting” even once (since it is not in the specification). Nevertheless, somehow in paragraph 46 Dr. Weaver concludes that maintaining a cross-reference table and accessing it discloses “converting data relating to a selected matching item and an associated source to data relating to an item and a different source,” despite the fact that he cites no part of the specification that teaches any such “converting.”

57. I note that this Court in *ePlus v. SAP* found structure in the specification corresponding to the “means for converting” element. The Court included the following steps are part of the algorithm: “automatically recognizing that catalog number for selected matching item in requisition corresponds to same or similar item in another catalog.” ’683 Patent, 4:66-5:8 and 10:43-48 were cited. It is true that the ’683 Patent specification states at 10:45-48, “Distributor’s mainframe host computer 10 would recognize the entry for the item from vendor Promega’s catalog (R6012, 00005860) as corresponding to that same item available from Fisher’s catalog (PRR6012, 00000001).” However, that is merely a statement of function. No algorithm is given for any automatic recognition. Therefore, I do not believe the required structure has been disclosed. Furthermore, there is no reference to converting in the citations, so whatever structure is disclosed is not linked to the function of “converting.” Thus, in my opinion the algorithm recited in the *SAP* decision does not satisfy the requirement of being linked to or



associated with the “converting” function and thus in this respect the *SAP* decision found structure where none exists.

Response to Weaver Section V.E., Paragraphs 47-54

58. Section V.E, paragraphs 47-54, argues that Lawson and the Court have it wrong in construing the function of “means for selecting the product catalogs to search” to require the selection of more than one catalog. I first observe that the proper language to be used if one or more catalogs were to be selected would be “means for selecting one or more product catalogs to search” or “means for selecting at least one product catalog to search.” Neither of those phrases was used.

59. Moreover, the entire import of the specification is that the invention allows searching multiple catalogs, which was expressly touted in the specification to be an improvement over the prior art: “None of these known requisition/purchasing systems ... provide the capability for a user to search a database containing two or more vendor catalogs, and then to transfer information about the items selected as a result of such searches into a requisition/purchasing system such as Fisher RIMS for building a requisition for the catalog items.” ’683 Patent, 1:60-2:2. “The known computer systems for searching vendor catalogs are limited in that only one such vendor catalog is accessible to a user at any given time.” ’683 Patent, 2:8-11. Further: “It would also be desirable to provide such an electronic sourcing system that is capable of searching a database containing at least two vendor product catalogs for product information.” ’683 Patent, 2:25-29. Additionally, “It would further be desirable to provide such an electronic sourcing system that is capable of searching a database of catalog items contain [sic] in at least two vendor product catalogs, selecting particular items located, and transferring information about the items selected (for example, a catalog number and a vendor identifier, such as vendor name and/or vendor number) to a requisition/purchasing system for inclusion in a requisition generated by the system.” ’683 Patent, 2:30-37. Despite these disclosures, Dr. Weaver would ignore the plain meaning of “product catalogs” and eliminate the asserted advantages of the inventions. In fact, if Dr. Weaver is correct that the means for

selecting can only choose one catalog, then the claims in which this element appears would be invalid based on the patentee's own acknowledgement that such systems were known in the prior art.

60. Dr. Weaver is correct in stating in paragraph 51 that the limitation "at least two product catalogs containing data relating to items associated with the respective sources" can be satisfied by a system having only two catalogs. However, his reasoning in paragraph 53 is faulty. He argues that if a system has only two catalogs and selecting must require at least two catalogs, then selecting would be superfluous since both catalogs would have to be selected. However, the fact that a claimed feature may occasionally be superfluous does not imply that the plain meaning of the feature should be ignored. Moreover, the plain meaning does not render the limitation superfluous at all. It simply means that in the event that there are more than two catalogs, then selecting may produce only two. In the event that there are exactly two catalogs, then the result of selecting is that both must be selected. Such a construction violates no principle of patent law.

61. In paragraph 53, Dr. Weaver makes certain incorrect statements concerning the Court's Markman constructions in *ePlus v. Ariba*. First, neither '683 claim 3 nor claim 6 were at issue in that case, and no construction of those claims was given by the Court. The Court did state that "the 'selecting' and 'searching' claims contemplate a system through which a user could select just one catalog to search from the two or more that are available; this clearly would not involve concantation [sic] of the selected catalogs." *ePlus v. Ariba* Markman Order, p. 10. The Court evidently thought the better in its later constructions in *ePlus v. SAP*, which specifically addressed '683 claims 3 and 6 and found that the function of the "means for selecting" element in those claims was "selecting more than one product catalog to search." *ePlus v. SAP* Markman order, p. 2.

62. Dr. Weaver further argues in paragraph 53 that the specification discloses that a "vendor name" can be input for catalog selection. He errs, however, in taking the logical leap that this must mean that only a single catalog may be the result of the search. Vendors typically

produce numerous catalogs for different product lines, and specifying a vendor name might result in selection of many catalogs.

63. I therefore disagree with Dr. Weaver's contention in paragraph 54 that a person of ordinary skill in the art would understand that the means for selecting could select only a single catalog.

Response to Weaver Section V.F., Paragraphs 55-72

64. Section V.F, paragraphs 55-72, argues that the algorithms cited by Lawson as structure for various means-plus-function elements contain unnecessary steps. This ignores the fact that this Court already found in *ePlus v. SAP* that those steps were indeed part of the recited structure. If Dr. Weaver disagrees with the Court's previous constructions, he should at least explain why, but he has not done so.

65. In paragraphs 60-66, Dr. Weaver attempts to argue that searching local RIMS databases is not part of the "means for searching." However, he has ignored the fact that the specification discloses two algorithms for initiating searches. One algorithm initiates a search through RIMS. This is the first structure cited by Lawson. The other algorithm does not go through RIMS. This is the second structure cited by Lawson. Because two different searching algorithms are disclosed, there are two structures corresponding to the "means for searching."

66. The statement in paragraph 61 that "search programs 50 and 250 are not even connected to the RIMS databases and have no ability to access the data stored in the RIMS database" is incorrect. Programs 50 and 250 run on the local computer (20 and 220, respectively). The RIMS databases, shown as 42 in Fig. 1A, are maintained under the OS/2 operating system, which also runs the local computer. Thus these databases reside on the same computer that runs programs 50 and 250. Notwithstanding this fact, Lawson nowhere asserts that programs 50 and 250 access the RIMS database. They form part of the "means for searching" only to search other catalog databases.

67. Paragraph 63 asserts that a search of RIMS databases "simply never happens." Whether or not that is true in Plaintiff's actual system is irrelevant – what matters is what the

specification discloses. Dr. Weaver in effect is saying that the RIMS databases have no function whatsoever. (If a database is never searched, then it in effect it might as well not exist.) That is simply not true. The RIMS databases are recited to maintain price information: “Prices for type 05 and 06 items are maintained in the local computer’s 20 own databases 42B and 42C.” ’683 Patent, 15:7-9. It is necessary to search these databases to obtain information required for ordering.

68. Paragraphs 67-72 discuss the requirement of concatenation. Dr. Weaver asserts that concatenation is not required, but it is the only algorithm disclosed in the specification for searching multiple catalogs: “If searching for a molecular biology product, the user would select the Fisher and Promega catalogs. TV/2 search program 50 would then concatenate those two catalogs to perform a keyword, catalog number or other subject search and generate a Hit List of pages (panels) from both catalogs where the searched-for items were found.”

69. Paragraph 68 argues once again, incorrectly, that in the claimed invention requiring “means for selecting the product catalogs to search” the user could select only one catalog to be searched. This argument has been refuted above.

70. The argument in paragraphs 69-70 is likewise incorrect. Whether or not claim 6 requires prior selection of catalogs is irrelevant. It requires a database containing “data relating to items associated with at least two sources.” The only algorithm disclosed in the specification for searching such a database requires concatenation of the sources. Nothing in paragraph 69 refutes that fact. Whether or not a search is specified by giving criteria (and not providing a selection of catalogs), the database of sources must still be searched and concatenation is the only disclosed algorithm.

71. The statement in paragraph 71 that “[b]y definition, catalogs stored in separate databases *cannot be* concatenated” is unsupported and just untrue. The catalogs in one database can be copied so that all catalogs to be searched reside on the same computer, and concatenation becomes possible. Dr. Weaver’s citation to ’683 Patent, 12:4-29 of the specification is unavailing. That passage is specific in stating that catalog database 36 is to be searched. Since

multiple catalogs must be present, and the only algorithm disclosed for searching multiple catalogs is concatenation, concatenation is required.

72. Dr. Weaver's conclusion in paragraph 72 that one of skill in the art "would not understand that the algorithm for performing the functions corresponding to the three 'means for searching' claim elements would include a step of 'concatenating' (*i.e.*, joining together by linking so as to form a chain or series) only selected product catalogs" is without basis. Dr. Weaver appears to be saying that one of skill in the art might know of other ways of searching multiple catalogs. Even if true, that opinion is irrelevant. It is my understanding that the construction of the means elements must focus on the structure disclosed in the specification, not on what can be conceived but is not disclosed.

Response to Weaver Section V.G., Paragraphs 73-80

73. Section V.G, paragraphs 73-80, argues incorrectly that Lawson has added unnecessary and improper steps to the construction of the "means for building a requisition" elements. Dr. Weaver has ignored the fact that Lawson's proposed constructions are virtually identical to those mandated by this Court in the *SAP* case.

74. In paragraph 76-77, Dr. Weaver argues that the algorithmic steps of "initiating a search for matching items," "displaying via catalog search program a hit list (47) of search results," "selecting one or more items to be requisitioned" and "generating an order list" are not properly included in the structure corresponding to the "building a requisition means." His reasoning is that the claims recite that the requisition is built from "selected matching items and their associated source(s)." Dr. Weaver, however, has not quoted the claims faithfully. What '683 claims 3 and 6 recite is a "means for building a requisition using data relating to selected matching items and their associated source(s)." That is, the requisition is not built from the matching items, but is built using *data* relating to the matching items. Similarly, '172 claim 1 claims a "means for building a requisition that uses data obtained from said database relating to selected matching items on said order list." Again, the requisition is not built from the items but from data obtained from a database.

75. The gist of Dr. Weaver’s argument is that the requisition is built from selected matching items so the items must already have been determined by the time the building means builds the requisition, so there is no need to search or select the items again. This logic is faulty. The second means element of claim 3 is “means for searching for matching items among the selected product catalogs.” The third means element is “means for building a requisition using data relating to selected matching items and their associated source(s).<sup>1</sup>” There is no claimed connection or interaction between these two means elements. Dr. Weaver supposes that the “selected matching items” referred to in the third means must be selected from the “matching items” searched for by the second means. However, that is not the way the claim reads. There is no requirement that the building means rely on, or even know about, the matching items located by the searching means. There is not even a requirement that matching items be located by searching at all. If applicants had meant to relate the second and third means, they could easily have claimed as follows: “means for searching for matching items among the selected product catalogs; means for building a requisition using data relating to selected OF THE matching items and their associated source(s).” Since the apparatus was not claimed that way, Dr. Weaver is incorrect in assuming it would be superfluous for the building means to perform a search.

76. In the absence of express claiming or some physical constraint, I understand that there is no temporal ordering among apparatus elements – each must simply be present in the device and must perform its construed function according to the structure laid out in the specification. It is, of course, possible for the structure associated with a means element, such as an algorithm, to exhibit temporal dependence among its steps, but in claims 3 and 6 there is no such dependence between the two different means. Furthermore, I do not understand there to be any prohibition in means-plus-function claiming that one means cannot rely on or invoke another means, nor is there any prohibition against the same software code being included as corresponding structure for more than one means.

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<sup>1</sup> Claim 6 recites similar means similarly claimed: “means for searching for matching items in the database; means for building a requisition using data relating to selected matching items and their associated source(s).”

77. Dr. Weaver's argument in paragraph 78 is that certain steps are performed by a "requisition/purchasing module" and other steps are performed by a "search engine module." The term "search engine" does not appear anywhere in the Patents, so I take it that "search program" was meant. The specification makes it clear that RIMS 40 initiates a search by invoking the search program 50. '683 Patent, 4:1-19. The algorithm for building a requisition therefore requires the invocation of sub-algorithms, such as searching. The fact that one program calls another as a subroutine does not mean that the subroutine steps are excluded from the first program's algorithm.

78. Paragraph 79 simply repeats Dr. Weaver's incorrect temporal argument. It further contains an incomplete statement: "The patent specification makes clear that it is only after an order list is generated, that the data included on the order list is transmitted from the search engine program to the requisition/purchasing program which will then build a requisition using the transmitted data." This is not an accurate description of the claimed apparatus. While the requisition program may use the data on the order list, it may also need further data of its own ("data relating to the matching items").

79. ePlus's proposed construction for the "means for building" elements is no more than a recitation of function and includes no algorithm or other structure.

80. I therefore do not agree with Dr. Weaver's conclusion in paragraph 80 that any of the steps in Lawson's and this Court's constructions for "means for building", which are clearly recited in the specification, are improper or superfluous.

### **REMAINING TERMS AND PHRASES**

81. The Weaver Declaration only addresses construction of means-plus-function elements. However, there are 10 other terms and phrases to be construed. This section explains why the constructions proffered by ePlus are incorrect.

82. For nine out of the 10 terms (the exception being "electronic sourcing system"), ePlus proposes that no construction is necessary because the terms have a plain and ordinary meaning. It is my understanding that whether or not the terms have a plain and ordinary meaning to the

layman is not relevant if they would have a different meaning to one of skill in the art. If so, the jury needs to be instructed by the Court what that meaning is. It should not be left to trial for the parties to argue different meanings to the jury. Therefore, all 10 terms should be given constructions. If ePlus believes that a term has a plain and ordinary meaning, it should state what the meaning is so Lawson can decide whether to agree to it and so the Court can decide whether to adopt it.

83. “Catalog/Product Catalog.” ePlus proposes no construction for this term but claims it has a plain and ordinary meaning. If it does have such a meaning, a layperson would think of a catalog as a printed document, which is not the way in which “catalog” is used in the Patents. Lawson’s construction is derived directly from the words of the specification. ePlus has proposed, in the event the Court finds construction necessary, the following definition: “an organized collection of items and associated information which typically includes a part number, price, catalog number, vendor name, vendor ID, a textual description of an item, and images of or relating to the item.” The word “typically” is not useful in a Markman construction because the jury will then have to decide what is typical and whether omission of an item that is “typically” included removes an element from the scope of the construction.

84. “Converting data relating to a selected matching item . . . to an item and a different source.” ePlus proposes no construction for this term but claims it has a plain and ordinary meaning. It does not. In the absence of a construction for “selected matching item,” it is not clear what it is to be converted. Lawson’s construction embodies the description of converting in the specification: “Substituting a catalog entry related to a product with a catalog entry describing the product from a different source by using matching codes in a cross-reference table for sourcing and pricing.” ePlus has proposed, in the event the Court finds construction necessary, the following definition: “A process of cross-referencing data relating to a selected matching item and an associated source to an item and a different source.” “Cross-referencing,” however, does not imply conversion, so ePlus’s construction is deficient. Products may be cross-



referenced in a table but without any conversion ever taking place. Lawson's construction involves "substituting," which remedies the difficulty.

85. "Matching Items." ePlus proposes no construction for this term but claims it has a plain and ordinary meaning. It does not, since one must specify what it is the items are to "match." They have to match search criteria, not each other. (Items in a cross-reference table are also "matching items," but they match each other, not search criteria.) Construction is necessary to eliminate this ambiguity, and Lawson's construction does so: "The results of a search of items matching a user-entered search criteria (i.e. "Hit List")." ePlus has proposed, in the event the Court finds construction necessary, the following definition: "items returned in search results that satisfy search criteria." This would be a suitable alternative if the modifier "user-entered" were added.

86. "Selected Matching Items." ePlus again proposes no construction at all for this term but claims the term has a plain and ordinary meaning. It does not, as explained in the previous paragraph. Construction is necessary to avoid ambiguity, and Lawson's construction accomplishes that: "One or more items selected by a user in the search program from the list of 'matching items' for inclusion in an order list." ePlus has proposed, in the event the Court finds construction necessary, the following definition: "items returned in search results that satisfy search criteria and are selected for inclusion on a hit list or in a requisition." This is incorrect. The "hit list" is the list of items satisfying search criteria from which selections can be made. The hit list is not a list of selected items.

87. "Electronic sourcing system." This is the only term for which ePlus has positively advanced a proposed construction, and that construction is incorrect. ePlus proposes "an electronic system for use by a prospective buyer to locate and find items to purchase from sources, suppliers, or vendors." That is but one of the functioning modes of the electronic sourcing system of the Patents. However, the sourcing system is also able to locate inventory and source goods without any purchase being necessary. This occurs, for example, when the items on a requisition are already in the requestor's inventory. For example, the specification

explains: “Product type ‘06’ for the item on line 004 indicates that this item is available for the requisitioner employed by the Customer from inventory owned by Customer's purchasing department but managed by local computer 20.” In such a case, no “purchase” is necessary.

88. “Searching for matching items among the selected product catalogs.” ePlus proposes no construction at all for this term but claims it has a plain and ordinary meaning. There is no reason to allow the jury to conduct a debate or worse, to allow counsel to argue different meaning to the jury at trial when the matter can be put to rest through claim construction.

89. “Order list.” ePlus proposes no construction at all for this term but claims it has a plain and ordinary meaning. It may indeed have one, but that is not the way the term is used in the Patents. To a layperson, an “order list” is probably a list of things he wants to order. But a “want list” of that kind is not an “order list” in the Patents. An item can only get onto an “order list” if it has been returned as the result of a search and subsequently selected. Merely wanting an item is not enough, since it cannot be ordered if it is not found in an accessible catalog.

90. “Cross-Reference Table.” For this term it is important to specify what is being cross-referenced. ePlus proposes no construction at all for this term. The jury should be informed of the content of the particular cross-reference tables mentioned in the specification, namely that they contain identification codes used to link vendor items by catalog number between two or more different vendors determined by a Distributor to be equivalent.

### CONCLUSIONS

91. None of Dr. Weaver’s objections to Lawson’s constructions is valid and those constructions, which are generally identical to those of this Court in *ePlus v. SAP*, should be adopted.

Executed on March 22, 2010 in Pittsburgh, PA.

  
Michael Ian Shamos, Ph.D., J.D.

**Exhibit 1**  
**Materials Considered for Purposes of this Declaration**

**Documents (including books, articles and prior litigation)**

Claim Constructions Pursuant to November 18, 2005 Markman Hearing (ePlus v. SAP)  
Memorandum Opinion dated January 19, 2005 (Markman Order in ePlus. v. Ariba)

**Litigation Documents**

Declaration of Alfred C. Weaver, PH.D. in Support of ePlus's Proposed Claim Construction for  
Certain Claim Terms in U.S. Patent Nos. 6,023,683 and 6,505,172  
Defendant Lawson Software Inc.'s Brief in Support of its Motion to Strike ePlus's Expert  
Declaration and Supplemental Brief  
Defendant Lawson Software Inc.'s Reply Brief in Support of its Motion to Strike ePlus's Expert  
Declaration and Supplemental Brief  
Defendant Lawson Software Inc.'s Opening Claim Construction Brief  
Defendant Lawson Software Inc.'s Responsive Claim Construction Brief  
Defendant Lawson Software Inc.'s Supplemental Claim Construction Brief Exhibits  
Defendant Lawson's Claim Construction Presentation, January 22, 2010  
ePlus's Claim Construction Presentation, January 22, 2010  
Plaintiff ePlus Inc.'s Brief in Opposition to Defendant Lawson Software, Inc.'s Motion to Strike  
Expert Declaration and Supplemental Brief  
Plaintiff ePlus Inc.'s Opening Claim Construction Brief  
Plaintiff ePlus Inc.'s Responsive Claim Construction Brief  
Plaintiff ePlus Inc.'s Supplemental Memorandum in Support of its Construction of Certain  
Means-Plus-Function Claim Elements

**Patents and Patent Applications**

Johnson et al. U.S. Patent 6,023,683 and its prosecution history  
Johnson et al. U.S. Patent 6,055,516 and its prosecution history  
Johnson et al. U.S. Patent 6,505,172 and its prosecution history